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SEISMIC ARRAY ANALYSIS CENTER

Harry Mack

Teledyne Geotech

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# SEISMIC ARRAY ANALYSIS CENTER QUARTERLY TECHNICAL SUMMARY REPORT JULY - SEPTEMBER 1972

H. MACK

18 OCTOBER 1972

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QUARTERLY TECHNICAL SUMMARY REPORT  
July - September 1972

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## INTRODUCTION

→ This quarterly report summarizes the operations and accomplishments in the SAAC for the period of July, August and September 1972. — T-100

**TASK A - OPERATE SAAC**

## Operation

The SAAC Detection Processor (DP) and Event Processor (EP) were run with constant parameter settings, 24 hours a day, seven days a week during this period.

Table I shows the DP uptime and downtime as well as the general problem categories causing the downtime. Total downtime was very much less in this quarter than in the previous one. Very few hardware problems were encountered and these were confined to the Special Purpose System (SPS) and tape drives.

Table II shows the EP and analyst time required to review and edit DP detections.

The IBM 360/44 computer was upgraded by increasing the core size and available disk space. The GRASP II software system was installed which provides two foreground and two background partitions with a result that job flow has increased significantly. A new CALCOMP LD12 disk system was installed and the rented IBM disks have been phased out.

<u>Month</u>	July	August (in hours)	September	Total
<u>Problems</u>				
Hardware	7.5	5.3	0.6	13.4
Software & Testing	1.6	1.1	2.5	5.2
Power Failure	4.2	-	-	4.2
50 KB Line	3	11.4	4.6	19.0
Preventative Maint.	0.4	5.4	4.5	10.3
<hr/>				
Total DP Downtime	16.7	23.2	12.2	52.1
Total DP Uptime	727.3	720.8	707.8	2155.9
% Uptime	97.8	96.9	98.3	97.6
Total Possible	744	744	720	2208

Table I. DP ISRSPS Up-Downtime for LASA Data  
in 3rd Quarter 1972



<u>Month</u>	July	August (in hours)	September	Total
DP Recording Time Covered by EP Analysis	725.9	717.5	703.7	2147.1
Analyst Time Required on EOC	88.6	118.2	104.3	311.1
IBM 360/40B Time Required on EP	308.7	210.5	301.25	820.45
<hr/>				
No. of Detections	13599	13188	15073	41860
No. of Events Listed on Summary	573	728	666	1967

Table II. DP-EP Analysis Time in 3rd Quarter 1972

### Documentation and Programming

New updates to ISRSPS Ref. Manuals 113S and 110S were distributed. Three new manuals were added, 107 Experimental Console Specification; 108S - ISRSPS Experimental Console Test Specification; and 109S - ISRSPS Experimental Console Test Specification.

EP is now run with DOS Release 26 which has eliminated some operational errors connected with DOS Release 25.

The transmission record of SAAC to NORSAR is not now included on the low rate tape with a subsequent increase in effective recording time.

A local event detector is currently being programmed and core space has been made available in the EP to accommodate this algorithm.

### ARPANET

The IMLAC PDS-1 graphics display unit has been installed and is fully operational. Using this terminal, the training of programmers in the use of the ARPANET has commenced. Several programs have been set up and run on the UCLA 360/91.

An interface device to connect the 360/44 to the TIP has been ordered from UCSB and delivery should be around the end of the year.

### Data Requests

During the quarter 492 external users data requests were fulfilled, 466 for MIT Lincoln Lab and 26 for the SDL. 30 Tapes had unrecoverable data leaving 672 outstanding requests on October 1st.

#### TASK B - EVALUATION

A series of off-line DP experiments was started. Previously processed LASA short period data are being re-analyzed using different number of sensors and subarrays.

The first experiment, using seven sensors per subarray instead of sixteen has been completed. A preliminary analysis indicates that about 2db in signal-to-noise ratio is lost compared with the sixteen sensor configuration.

#### TASK C - LASA/NORSAR COMPARISON

During this quarter 51 events reported on the NORSAR event summary but not reported by LASA/SAAC were rerun through the EP using the NORSAR locations and origin times as input.

Seven events were confirmed of which four had been originally detected but failed the EP threshold and three had not even been detected. The events used were from no particular region but were obviously from areas of common coverage.

#### TASK D - LP NETWORK EVALUATION

About 120 Asian events recorded at NORSAR and ALPA have been processed with FKCOMB.

These data are now being compiled in order to estimate relative detection threshold for surface waves.

A complete LP analysis of all events recorded during the International Seismological Month (Feb 20 - March 19 1972) is approximately two-thirds complete.